

ITMS'2016



Forum on Innovative Technologies and Management for Sustainability, ITMS'2016, 28-29 April  
2016, Panevėžys, Lithuania

## Social Responsibility as a transversal competence of graduates

Juan Jesus Perez

*Dept.of Chemical Engineering, Universitat Politecnica de Catalunya, Av. Diagonal 647, 08028 Barcelona, Spain*

---

### Abstract

Paper purpose:

The aim of the present communication is to propose a procedure to assess the level of competence achieved by graduates.

Design/methodology/ theoretical approach:

We propose to use a quality assurance procedure to assess and improve the level of competence achieved by graduates.

Findings:

Graduate students should exhibit hard competences –specific knowledge- in their field of study and, also soft or transversal competences that provide complementary abilities to use the former in any specific environment. Social responsibility is among the list of transversal competences. We found that transversal competences are difficult to assess. The method we propose provides a clear idea of the level of competence acquired.

Practical implications:

Social responsibility provides graduates a guidance to develop their activities as professionals within a framework of sustainable development, in such a way that projects include considerations concerning environmental, social and economic dimensions.

Originality/Value

Is an application of a well-established methodology to assess competences of graduates.

Keywords: Social responsibility of graduates; quality assurance; transversal competences; improvement of social responsibility

© 2016 The Authors.

Peer-review under responsibility of the Kaunas University of Technology, Panevėžys faculty of Technologies and Business

*Keywords:* Type your keywords here, separated by semicolons ;

---

### 1. Introduction

Social responsibility provides an ethical framework to act with a breadth and depth of vision needed to understand the strongly interwoven environmental, economic and social consequences of specific decisions acting

© 2016 The Authors.

Peer-review under responsibility of the Kaunas University of Technology, Panevėžys faculty of Technologies and Business

for the benefit of society at large. It provides individuals the ability to articulate similarities and contrasts among cultures, times and environments, demonstrating understanding of cultural pluralism and knowledge of global issues. Lack for social responsibility competence by leaders in technology, government, business and industry may result in choices made that do not take into consideration broader perspectives, neglecting the unsustainable consequences for present and future generations.

Accordingly, the effective progress of humankind requires policymakers and leaders to be competent for social responsibility, guaranteeing to act with long-term strategies. Thus, it is necessary that both, Institutions of higher education and Professional associations build up a sense of social responsibility through their study programs and professional codes of ethics.

Social responsibility is a transversal competence to be acquired along a study program that needs to be consequently designed to assure knowledge, skills and attitudes. Knowledge includes ideas on sustainable development, skills involves the use of tools for assessing the impact of decisions, taken into account the environmental, social and economic components and attitudes involves a commitment to take decisions taking into account long-term strategies. However, social responsibility is a special competence that not requires greening study programs, but requires a holistic approach and consequently, an involvement of higher education Institutions in greening the campus [2].

This work aims to review diverse aspects to be considered for an effective acquirement of social responsibility of their graduates and describes a quality assurance system to assess the degree of implementation of a holistic approach on education for sustainable development in Higher Education Institutions. It is assumed implicitly that a higher degree of implementation will correlate with higher levels of competence for social responsibility by graduates.

## 2. Sustainable development

Until very recently, humankind progressed in terms of economic growth in a scenario of unlimited natural resources. Prospective studies on the future of humankind carried out about thirty-five years ago resulted very critical about the consequences of continuing in the same socio-economic model, suggesting a limit to growth [1]. Specifically, considering the population growth rate and the use of resources, the carrying capacity of Earth could be achieved in about hundred years [3]. These studies also suggested that the only way for humankind to have an effective progress, taking into account Earth limitations, was to change people's lifestyle, taking for granted that we shall dispose of an increasing technological efficiency. Accordingly, it is not enough to dispose of an increasingly sophisticated technology to cope with this limit, but it is necessary to change our attitude in regard to the utilization of resources, increasing our capacity of recycling and thinking in the impact caused by a product in terms of its lifecycle. This change of attitude will permit a future development that meets the needs of the present without compromising the ability of future generations to meet their own needs [4]. These conditions are met in a sustainable development model of progress. The term sustainable implies something that survives with time, something that is unsustainable does not. Sustainable development is a progress that moves move us from the present state towards a more nearly sustainable state in humankind's benefit. Sustainable development means to continuously improve the quality of life and wellbeing for present and future generations, by linking economic development, protection of the environment and social justice.

Sustainable development requires policymakers to think in the long-term consequences of the activities we carry out at present as well as a closer cooperation among states, but also needs awareness of the population as key ingredient. Responsible consumption habits and improved recycling attitudes are pivotal to take humankind into a sustainable development track. Fortunately, globalization helps in this direction, stressing the consequences of non-responsible attitudes.

One of the most dramatic consequences humankind is presently facing regards global warming produced by greenhouse gas emissions from fossil fuel use. Temperature rise affects worldwide weather patterns in such a way that heat waves are becoming more common and intense, precipitation patterns are changing and heavy precipitation events are becoming more frequent and there are changes in the frequency and severity of droughts. This has a local impact on crops and fresh water availability with economic and social consequences. Temperature rise will also increase ice decline with the consequent rise of sea level producing a global coast wetlands lost. Solution to this problem requires a coordinated action among states for a drastic emissions reduction and a determined support for designing gas capture technologies. It is urgent that policymakers agree in the implementation of a long-term strategy including environmental, economic and social aspects. A first step in this direction was the Kyoto Protocol to the United Nations Framework Convention on Climate Change for the reduction of greenhouse gas emissions. This agreement contemplated different degrees of commitment to developed economies than to developing countries. Unfortunately important greenhouse gas producers did not signed the agreement [5], giving us a new chance in the convection recently held in Paris [6]. However, there should also be in parallel an important commitment on the use of renewable energies and new methods for greenhouse gas capture.

## 3. Social responsibility

Choices made by leaders in technology, government, business and industry are sometimes taken without consideration broader perspectives that neglect the consequences for a sustainable development of our planet. Social responsibility is a transversal competence that helps professionals to take decisions in a framework of sustainable development. It requires full awareness of the need to preserve the quality of life and wellbeing for present and future generations, by linking economic development, protection of the environment and social justice, together with a personal commitment to act in these lines through a responsible consumption, enhance the use of circular economy and follow an ethical behavior.

The concept of social responsibility has also been picked up by enterprises in the form of social corporate responsibility. It is a voluntary management strategy where companies aim to create a positive impact on society while doing business. Social corporate responsibility can be defined as the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the local community and society at large [7]. Acting in a socially responsible manner requires not only respecting legal requirements, but also going beyond them through voluntary investments in human capital, in environmental management and in relationship with all stakeholders [8]. The ISO26000 norm is intended for use by organizations of all types to assist them in their efforts to operate in the socially responsible manner that society increasingly demands. It is based in seven principles: accountability; transparency; ethical behavior; respect to stakeholders' interests; respect for the rule of law; respect for the international norms of behavior and respect for human rights [9].

Social corporate responsibility although based in the same principles described previously regarding individuals, attracts corporates interested in a rational way by looking for profit opportunities. A social responsible code of conduct provides enterprises a competitive advantage: reputation; the ability to attract and retain workers or members, customers, clients and users; the maintenance of employee morale, commitment and productivity; the perception of investors, owners, donors, sponsors and the financial community; better relationships with companies, governments, the media, suppliers, peers, customers and the community in which it operates.

In view of the previous ideas, an ideal scenario for a real progress in sustainable development would be to dispose of professionals competent for social responsibility, working for corporations with a strong social corporate responsibility agenda. However, this goal can only be achieved thinking in the long-term and acting in small steps.

#### **4. Social responsibility in the student's curricula**

Competence for social responsibility requires building up capacities for sustainable development in a holistic manner in such a way that not only includes knowledge, but also reflects on the complexity and interrelations of behavior as well as decision-making in a future-oriented and global perspective. A profound understanding of sustainable development is a necessary condition to achieve competence for social responsibility, since learning for sustainable development aims to prepare graduates to be able to contribute to, stimulate and lead the debate on complex issues such as what constitutes global citizenship and good governance, sustainable resource use, and the determination of ecological limits.

Education for sustainable development can be defined as the process to provide the necessary tools to increase the knowledge and understanding, skills, and attributes needed to create a just and sustainable future. Education for sustainable development requires a multi-disciplinary approach that allows making connections, share knowledge, and work together on emergent areas [10]. It aims to develop students' ability to understand and evaluate connections between big issues, such as inequality, public health, global consumption, biodiversity loss and the limits of natural systems.

We live a very critical moment that requires substantial dedication to education for sustainable development, as stressed in the recent Aichi-Nagoya Declaration on Education for Sustainable Development: "Education for sustainable development is an opportunity and a responsibility that should engage both developed and developing countries in intensifying efforts for poverty eradication, reduction of inequalities, environmental protection and economic growth, with a view to promoting equitable, more sustainable economies and societies benefiting all countries, especially those most vulnerable such as Small Island Developing States and Least Developed Countries" [11].

Since the 1972 Stockholm UN Conference on the Human Environment [12], education has been recognized at the international level to play an important role in fostering environmental protection and conservation. This idea was further emphasized in the following its follow ups. Specifically, in the official document of the 1992 Rio de

Janeiro Earth Summit (Agenda 21), it was recognized that education is one of the many paths to sustainability. Actually, education alone cannot achieve a more sustainable future; however, without education and learning for sustainable development, we will not be able to reach that goal [13]. In 2005 the United Nations adopted a Decade of Education for Sustainable Development (2005–2014) led by UNESCO and aimed at integrating the principles, values, and practices of sustainable development into all aspects of education and learning. The analysis of the results achieved, recently published in a final report [14] suggest that there is an increased recognition at the international policy level that education is essential to the advancement of sustainable development, with many countries committed to continuing to work to advance education for sustainable development at the national and local levels.

Although the Decade of Education for Sustainable Development covers all levels of formal and informal education, higher education institutions are considered as drivers of the education for sustainable development since they are involved in training most of the professionals who develop, lead, manage, teach, work in, and influence society institutions, including the training of educators who provide education at both primary and secondary levels. In this direction, higher education institutions have long been engaged in embedding environmental education and education for sustainable development into their functions including education, research and community outreach, but also in campus operations [15]. Since the Talloires Declaration in 1990 [16], an increasing number of institutions have been engaged in activities to embed the principles of sustainability into their systems. Today, many institutions are interested in embedding sustainable development in their operations and activities, as well as on the consequence of their implementation including training social responsible graduates and creating a social responsibility culture in their institutions [17]. However, not all the initiatives reported by diverse institutions are in line with a holistic implementation of programs, research, outreach activities and campus operations embedding environment, society and economy. They range from those institutions that have implemented initiatives for greening campus to those that have incorporated social corporate sustainability in their strategic planning; from those that have included courses on environmental science in their programs to those that offer a full integration of sustainability related topics into existing curricula or research [18].

## 5. Assessment of the competence for social responsibility

As mentioned above a necessary condition for graduates to be competent for social responsibility is that institutions are committed for developing their activities in a framework of sustainable development. Accordingly, let us describe diverse initiatives available to assess the degree of implementation for sustainable development in higher education institutions. Some initiatives focus on the assessment of institution activities covering the diverse university functions as well as campus operations from different perspectives [19–22], whereas others specifically focus on assessing curricula contents [23]. Among the former, the first initiative was proposed by the Dutch committee for sustainable higher education who implemented a model based on quality assurance methodology. The so-called Auditing Instrument for Sustainable Higher Education (AISHE) includes five fields: vision and policy, expertise, educational goals and methodology, education contents, and results assessment [19]. Another tool to assess the degree of development of universities in education for sustainable development is based on the Global Reporting Initiative sustainability guidelines, considered one of the best available tools to assess and report sustainability for corporations [24]. Its strengths lie in its multi-stakeholder approach and its number of indicators in the economic, environmental and social dimensions. The Graphical Assessment for Sustainability in Universities (GASU) is an extension of this tool to cover specific aspects of the activities carried out in the institutions of higher education including education, research, campus operations and community outreach [20]. The Sustainability Tracking, Assessment & Rating System (STARS) is a self-assessment tool designed for an institution to earn points based on the performance on diverse items related to sustainable development grouped in four categories: academic, engagement, operations and planning and administration. The final score permits to understand the degree of involvement of an institution in sustainable development [21]. Finally, the Quality System of Science and Technology Universities for Sustainable Industry (QUESTE-SI) is a quality assurance tool, which supports quality improvement of sustainable development education in higher engineering education institutions. It requires the elaboration of an internal assessment report that is followed by an auditor team external evaluation. QUESTE-SI

assessment is based on the information gathered in four dimensions: Institution strategy, education and curriculum, students' involvement and research and innovation [22]. Similar to STARS, after the evaluation institutions get a score that informs of the present institutional status in regard sustainable development and helps to identify weaknesses for improvement in the future.

Although these are tools to assess the degree of implementation for sustainable development of higher education institutions, it is expected that stronger implication of institutions for sustainable development provide higher accomplishment of competent students for social responsibility, although this needs to be further studied.

## **6. Conclusion**

Social responsibility is a competence that all our graduates should accomplish. It permits to act with a breadth and depth of vision needed to understand the strongly interwoven environmental, economic and social consequences of specific decisions acting for the benefit of society at large. A necessary condition for students to acquire such a competence is that institutions of higher education are committed for sustainable development in their strategic vision and provide a solid interconnected view of the environmental, social and economic components in their functions: education, research and community outreach, as well as campus operations. There are different tools available to assess the degree of implementation for sustainable development of higher education institutions. It is expected that stronger implication of institutions for sustainable development provide higher accomplishment of competent students for social responsibility.

## References

- [1] Meadows DH, Meadows DL, Randers J, Behrens III WW. *The Limits to Growth: a report for the Club of Rome's project on the predicament of mankind*. Universe Books. Boston, 1972
- [2] Koester RJ, Eflin J, Vann J. Greening of the campus: a whole-systems approach. *J. Clean. Product*. 2006; 14: 769-779
- [3] Meadows D, Randers J, Meadows D. *Limits to Growth: The 30-Year Update.*, Chelsea Green Publishing Company, White River Junction, VT. 2004
- [4] World Commission on Environment and Development. *Our common future*. Oxford University Press, New York. 1987
- [5] United Nations, treaty collection. Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997.  
[https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XXVII-7-a&chapter=27&lang=en](https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-a&chapter=27&lang=en). (accessed on 01/04/2016).
- [6] United Nations, treaty collection. Paris Agreement to the United Nations Framework Convention on Climate Change. 2015.  
[https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XXVII-7-d&chapter=27&lang=en](https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&lang=en) (accessed on 01/04/2016).
- [7] Armstrong JS, Green KC. Effects of corporate social responsibility and irresponsibility policies. *J. Bus. Res.* 2013; 66: 1922 - 1927.
- [8] Popa M, Salanță I. Corporate social responsibility versus corporate social irresponsibility, Management & Marketing. *Challeng. Knowl. Soc.* 2014; 9: 137 - 146.
- [9] International Organization for Standardization. ISO 26000. Guidance on social responsibility, 2014.  
[http://www.iso.org/iso/discovering\\_iso\\_26000.pdf](http://www.iso.org/iso/discovering_iso_26000.pdf) (accessed on 01/04/2016).
- [10] Barth M, Michelsen G. Learning for change: an educational contribution to sustainability science. *Sustain Sci.* 2013; 8:103-119.
- [11] Aichi-Nagoya Declaration on Education for Sustainable Development. Aichi-Nagoya 2015.  
<http://unesdoc.unesco.org/images/0023/002310/231074e.pdf> (accessed on 01/04/2016)
- [12] United Nations Conference on the Human Environment. Stockholm in 1972  
<http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID=1503>. (accessed on 01/04/2016)
- [13] United Nations Conference on Environment and Development. Rio de Janeiro. 1992. <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>. (accessed on 01/04/2016)
- [14] Buckler C, Creech H. Shaping the future we want: UN Decade of Education for Sustainable Development (2005-2014); final report. 2015  
<http://unesdoc.unesco.org/images/0023/002301/230171e.pdf> (accessed on 01/04/2016)
- [15] Cortese AD. The critical role of higher education in creating a sustainable future. *Plann. High. Educ.* 2003;31(3):15-22.
- [16] Association Leaders for a Sustainable Future. Report and Declaration of the Presidents Conference. 1990  
[http://www.ulsf.org/programs\\_talloires.html](http://www.ulsf.org/programs_talloires.html) (accessed on 01/04/2016)
- [17] Barth M, Timm J-M.. Higher Education for Sustainable Development: Students' Perspectives on an Innovative Approach to Educational Change. *J. Soc.Sci.* 2011;7: 13-23.
- [18] Lozano R, Ceulemans K, Alonso-Almeida M, Huisingh D, Lozano F J, Waas T, Lambrechts W, Lukman R, Hug J. A review of commitment and implementation of sustainable development in higher education: results from a worldwide survey. *J. Clean. Product*. 2015; 108:1-18.
- [19] Rooda N. Sailing in the winds of change. Ph. D. Thesis. Maastricht University. 2010.
- [20] Lozano R. A tool for a Graphical Assessment of Sustainability in Universities (GASU). *J. Clean. Product*. 2006, 14:963-972.
- [21] AASHE, The STARS Program. AASHE's Sustainability Tracking, Assessment & Rating System. The Association for the Advancement of Sustainability in Higher Education, Denver, Colorado, USA. 2016  
([http://www.aashe.org/files/documents/STARS/stars\\_2.1\\_technical\\_manual.pdf](http://www.aashe.org/files/documents/STARS/stars_2.1_technical_manual.pdf) accessed on 01/04/2016)
- [22] QUESTE-SI – Quality System of Science and Technology Universities for Sustainable Industry. <http://plone.queste.eu/> (accessed on 01/04/2016)
- [23] Lozano FJ, Lozano R. Developing the curriculum for a new Bachelor's degree in Engineering for Sustainable Development. *J. Clean. Product*. 2014; 64:136-146.
- [24] Hussey DM, Kirsop PL, Meissen RE. Global reporting initiative guidelines: an evaluation of sustainable development metrics for industry. Environmental Quality Management 2001.